



STATE OF WASHINGTON
DEPARTMENT OF COMMUNITY,
TRADE AND ECONOMIC DEVELOPMENT

Washington Climate Challenge

Climate Advisory Team

Meeting #3

August 7, 2007

WA Departments of Ecology & Community Trade &
Economic Development (CTED)

Center for Climate Strategies

Ross & Associates

Agenda

- **Welcome and Announcements**
- **Updates and Briefings**
 - Connectivity with Regional Climate Activities
 - Ad Hoc Market-Based Mechanism Webinars
 - Preparation/Adaptation Working Groups
 - Washington's Emissions Inventory and Forecast
 - Assessment of Recent Actions
- **Key Components of Economic Analysis in the CAT's Efforts and Recommendations**
 - Tracking Clean Energy Job Creation
 - Analyzing and Aggregating the Cost/Benefits of the CAT's Recommendations
 - Creating a Low-Carbon Economy, including Outreach to the Investment Community

Agenda (cont.)

- **Review and Affirm Technical Working Group Priority Lists and Preliminary Strategy Designs**
 - Residential, Commercial & Industrial
 - Transportation
 - Forestry
 - Agriculture
 - Energy Supply
- **Next Steps for the CAT and TWGs**
- **Public Comment**

Western Climate Initiative (WCI) Update

- Five subcommittees have been formed
 - Reporting, Sectors, Allocation, Offsets, Electricity/Leakage
 - Each subcommittee will develop a work plan
- Washington has been appointed to chair the WCI
- Regional goal will be announced soon
 - A stakeholder call will also be scheduled to discuss the regional goal
- WCI website launched this week
 - Link will be added to www.ecy.wa.gov/climatechange

Ad Hoc Market-Based Mechanism Tutorials

- Tutorial series
 1. Introduction to market-based mechanisms (June 28)
 2. What key principles are emerging from other efforts? (July 23)
 3. What are the key issues that are most germane to Washington in market based approaches? (August 24, 1:00 – 3:00 p.m.)
 4. A chance to hear from emerging Washington-based perspectives on market mechanisms
(Sept. 12, 9:30 – 11:30 a.m.)
- Topics to explore in Tutorial #3?
- Perspectives to hear from for Tutorial #4?

Preparation/Adaptation Working Groups

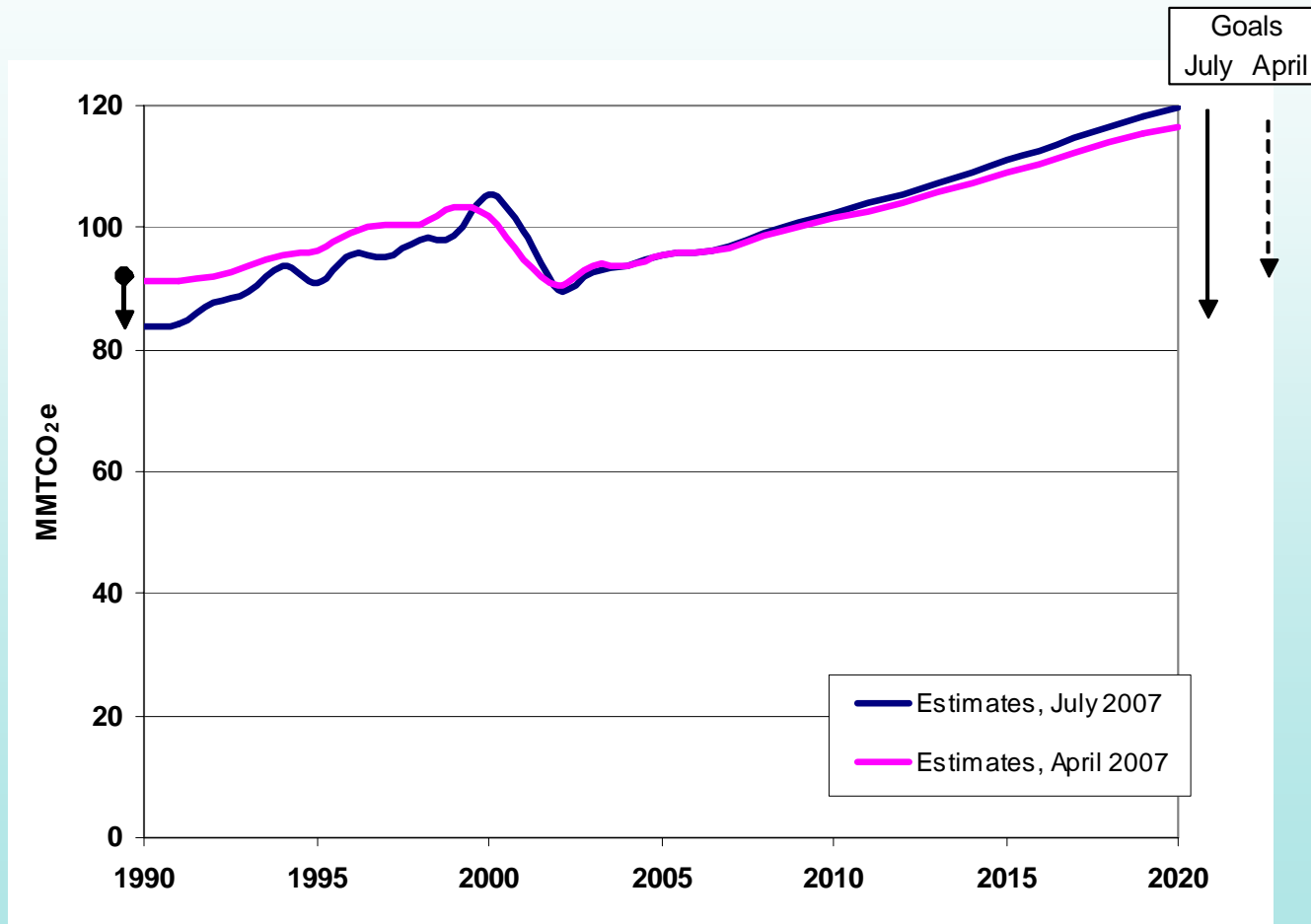
- PAWGs are focusing on strategies that move the state (at all levels) forward in integrating climate impacts into future decision-making in straightforward and meaningful ways
- PAWGs are structured across five impact sectors
 - Forest Resources, Agriculture, Human Health, Fresh Water Resources and Coastal/Infrastructure
- Each PAWG has met at least once since the 2nd CAT meeting
- Key PAWG activities include
 - Reviewing the climate impacts baseline for each sector
 - Identifying
 - Key issues/vulnerabilities
 - A set of fundamental issues/vulnerabilities for further examination
 - Specific adaptation approaches and expectations for these issues/vulnerabilities:
 - Developing recommendations that identify
 - Opportunity areas and preparation/adaptation strategies WA can pursue
 - Critical research needs and approaches for filling information gaps
 - Identifying any additional strategies that are broad and cross-cutting

Emissions Inventory & Forecast: Current Status and Revisions

- Revisions since April 2007 draft
 - New data and calculations
 - Updated consumption-based electric sector emissions
 - Waste management emissions
 - Marine emissions
 - Motor gasoline data sources
 - Corrections and clean-up
 - Copy editing and agriculture emissions adjustment
- Work in Progress
 - Electric sector – 1990 load-based emissions and projections to 2020
 - Forestry and land-use emissions and sinks

Washington Gross GHG Emissions, revised

(consumption-based electricity emissions, excludes forestry and soil sequestration)



Assessment of Recent Actions

Nine recent Washington State actions quantified in terms of emissions reductions from Business As Usual (BAU) projections

Transportation-related actions

1. Emission tailpipe standards for automobiles
2. Biofuels
3. State fleet efficiency
4. Cleaner Energy Act

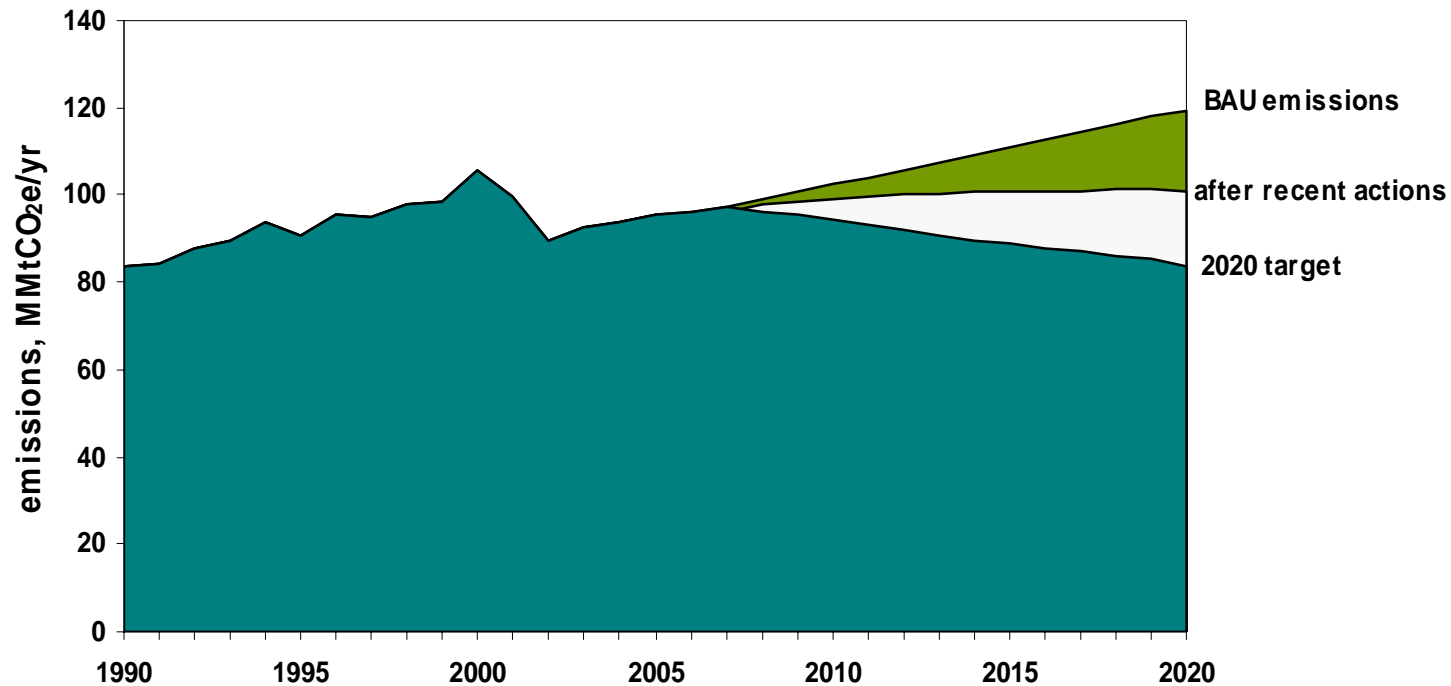
RCI - related actions

5. State green building standard
6. Building codes
7. Appliance standards
- 8a. Energy Independence Act (efficiency measures)

Energy Supply – related actions

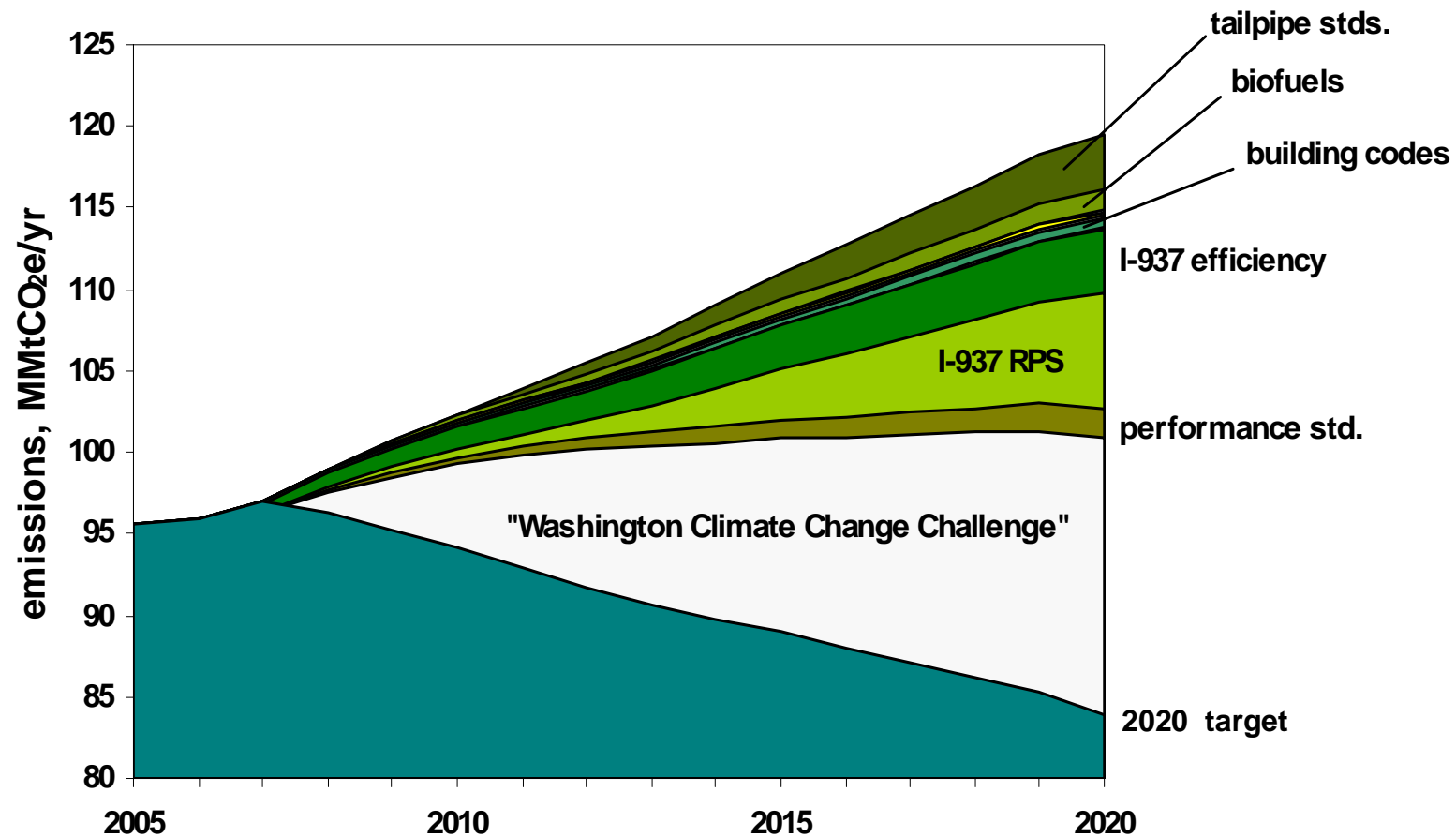
- 8b. Energy Independence Act (renewable portfolio standards)
9. GHG emission performance standard (ESSB 6001)

Recent Actions



- Preliminary estimates based on current inventory and forecast and simple analysis methodology
- Recent actions appear to contribute slightly over 50% to achievement of the 2020 emissions goal

Recent Actions



Key Components of Economic Analysis in the CAT's Efforts and Recommendations

The approach for analyzing the clean energy jobs goal and related economic impacts has three components:

1. Estimating the jobs goal
2. Improving business climate for clean energy and low-carbon investments
3. Economic analysis of greenhouse gas reduction strategies

1. Jobs Goal

“By 2020, increase the number of clean energy sector jobs to 25,000 from the 8,400 jobs we had in 2004”

- Goal comes from baseline established by CTED publication, *A 2005 Look at the Renewable Energy, Energy Efficiency, and Smart Energy Industry in Washington State*
 - Only primary (not secondary) jobs which fall into the employment areas listed in the report will be counted directly towards the achievement of the Executive Order goal
 - Other jobs may arise from a lower carbon economy (e.g. in agriculture or forestry); if they can be quantified, they will be included in the final report, but not credited towards achievement of the goal
- Jobs analysis will yield an overall estimate of 2020 clean energy jobs, taking into account the collective impact of the full suite of CAT actions and the actions recently approved and underway in the state
 - Jobs assessment will occur at a later stage of the process (October/November)
 - Job creation potential will be considered (qualitatively) in the design of individual CAT actions
 - Quantitative assessment will generally be done only at the broad sectoral level
- CTED expects to periodically conduct studies (similar to the 1998 and 2005 clean energy jobs reports) to determine progress toward the goal.

2. Business Climate for Clean Energy and Low-Carbon Investments

- CAT members have expressed interest in reaching out to the investment community on how best to enhance investments that reduce carbon and spur technology innovation throughout Washington's economy
- Proposal - Bring together members of the investment community to address two questions
 1. What are the policy signals from the state that the financial community looks for when investing in clean energy/low carbon technologies?
 2. Are there any specific areas of interest to the financial community which connect with strategies under consideration in the Climate Challenge process?

3. Economic Analysis of GHG Reduction Strategies

- Recommendations may include both quantified and non-quantified actions
 - Emphasis will be on quantification of GHG reduction potential and cost or cost savings for as many recommendations as possible
 - Additional quantification needs related to co-benefits or feasibility issues will be evaluated on a case-by-case basis pending CAT input and available resources
 - Job creation and fuel import savings will be estimated on aggregate basis
- Costs will be *quantitatively* assessed from a *state-wide* societal perspective, as opposed to the perspective of individual actors (state government, ratepayer, etc.)
 - To the extent costs are likely to be borne, or benefits realized, by selected actors or groups, this should be duly noted by the TWGs.
- Quantitative analysis will be done in as consistent a manner as possible across the sectors and actions
 - The facilitation team will be working with the TWGs to ensure this occurs

3. Economic Analysis (cont.)

- Will conduct a “cost-effectiveness” or “social cost” assessment, rather than a broader macro-economic analysis or “cost-benefit” analysis
- Key cost results to be reported are:
 - Cumulative net present value cost or benefit of individual actions (total millions \$ in a common reference year)
 - Cost per ton of GHG emissions (\$/tCO₂e)

Ten Step Work Plan

1. Develop initial GHG inventories and forecasts
2. Identify possible GHG mitigation options
3. *Identify initial priorities for evaluation*
4. *Evaluate supply potential, cost effectiveness; ancillary and feasibility issues as needed*
5. *Identify barriers, alternative policy design needs*
6. Modify, add or subtract options as needed
7. Evaluate cumulative results of options (including job creation and fuel imports)
8. Iterate to consensus, with votes as needed
9. Aggregate options into implementation scenarios
10. Finalize recommendations and report language

Technical Working Group Briefings

- Update on recent meetings and activities
- High-level overview of each TWG's priority options for analysis and initial straw proposals for policy design
 - RCI: 11 total priority options, 4 straw proposals ready (2 are picked up by Energy Supply)
 - Transportation: 12 total priority options, 8 straw proposals
 - Forestry: 7 total priority options, 0 straw proposals
 - Agriculture: 7 total priority options, 3 straw proposals
 - Energy Supply: 7 total priority options, 5 straw proposals
- Action by the CAT
 - Review and affirm recommended policy priorities for analysis
 - Review and affirm initial direction established for those straw proposals ready for analysis

TWG Recommendations

- **Priority Options for Further Analysis**
 - June 5: CAT reviewed, amended, and approved complete catalogs for each TWG
 - June-July: Each TWG has identified a preliminary set of priority options for further analysis through balloting and discussion
 - Today: CAT reviews/affirms priorities
- **“Straw Proposals” for Policy Design**
 - June-July: TWGs have begun initial policy option designs (“straw proposals”) for selected priority options
 - Today: CAT reviews and affirms the direction of initial straw proposals that are ready for review
 - Aug-Sept: TWGs develop straw proposals for remaining priority options. CAT reviews and affirms those in September conference call.
 - Aug-Oct: TWGs further develop and conduct initial analysis/quantification of affirmed straw proposals

Policy Option Template

- Straw priority options include design, timing, goals and coverage
- Each priority option will eventually include:
 - Policy Description (Concept)
 - Policy Design (Goals, Timing, Coverage)
 - Implementation Methods
 - Related Programs and Policies
 - Estimated GHG Savings and Costs Per MMTCO₂e
 - Data Sources, Methods and Assumptions
 - Key Uncertainties
 - Contribution to Long-Term Goals
 - Additional (non-GHG) Benefits and Costs, as Needed
 - Job Creation
 - Reduced Fuel Import Expenditures
 - Feasibility Issues, as Needed
 - Status of Group Approval
 - Level of Group Support
 - Barriers to Consensus, if any

Residential, Commercial & Industrial TWG

Priority Mitigation Options and Straw Proposal Development Status

#	Mitigation Option Name	Straw Proposal Development Status
RCI-1	Demand-Side Management (DSM) Energy Efficiency Programs, Funds, or Goals for Natural Gas, Propane, and Fuel Oil (originally 1.2)	Developed by TWG; Ready for CAT Review
RCI-2	Targeted Financial Incentives and Instruments to Encourage Energy Efficiency Improvements (Business Energy Tax Credit and Private/Public Efficiency Funds) (originally 1.3 and 1.5)	Developed by TWG; Ready for CAT Review
RCI-3	Promotion and Incentives for Improved Community Planning and Improved Design and Construction (e.g. LEED, NAHB, Green Globes, Architecture 2030, and other guidelines) in the Private Sector (originally 2.2 and 2.4)	Developed by TWG; Ready for CAT Review
RCI-4	Energy Efficiency Improvement in Existing Buildings, with Emphasis on Building Operations (originally 2.6)	Developed by TWG; Ready for CAT Review

#	Mitigation Option Name	Straw Proposal Development Status
RCI-5	Rate structures and Technologies to Promote Reduced GHG Emissions (including Decoupling of Utility Sales and Revenues) (originally 5.3)	Not yet developed by TWG
RCI-6	Provide Incentives to Promote and Reduction of Barriers to Implementation of Renewable Energy Systems (originally 6.1)	Joint consideration with ES TWG in progress (See option ES-2)
RCI-7	Provide Incentives and Resources to Promote and Reduction of Barriers to Implementation of Combined Heat and Power (CHP, or “cogeneration”) and Waste Heat Capture, Including Net-metering for Combined Heat and Power (originally 6.2 and 5.2)	Joint consideration with ES TWG in progress (See option ES-7)
RCI-8	Consumer Education Programs, Including Labeling of Embodied Life-cycle Energy and Carbon Content of Products and Buildings (originally 4.1 and 8.2)	In progress
RCI-9	Identify GHG Emissions Impacts and Measures to Avoid, Minimize, or Mitigate them for Projects Requiring Government Review, and in Designing Government Rules and Regulations (originally 7.7 and 7.8)	Not yet developed by TWG
RCI-10	More Stringent Appliance/Equipment/ Lighting Efficiency Standards, and Appliance and Lighting Product Recycling and Design (originally 3.1 and 8.1)	Not yet developed by TWG
RCI-11	Policies and/or Programs Specifically Targeting Non-energy GHG Emissions (originally 7.4)	Not yet developed by TWG

Transportation

Priority Mitigation Options and Straw Proposal Development Status

#	Mitigation Option Name	Straw Proposal Development Status
T-1	Transit, Ridesharing, and Commuter Choice Programs (originally 5.2, 5.3, and 5.6)	In progress
T-2	State, Regional, and Local VMT and GHG Reduction Goals and Standards (originally 4.4 and 5.10)	Developed by TWG; Ready for CAT Review
T-3	Transportation Pricing (originally 5.7, 5.9, and 5.12)	In progress
T-4	Promote Compact and Transit-Oriented Development (originally 4.1)	Developed by TWG; Ready for CAT Review
T-5	Quantification of GHG Impacts of Transportation Plans, Programs, and Projects (originally 5.11)	Developed by TWG; Ready for CAT Review
T-6	Improvements to Freight Railroads and Intercity Passenger Railroads (originally 6.1 and 6.2)	Developed by TWG; Ready for CAT Review
T-7	Diesel Engine Emission Reductions and Fuel Efficiency Improvements (originally 1.3 and 1.4)	Developed by TWG; Ready for CAT Review
T-8	Local Transportation Financing Tools and Bicycle and Pedestrian Infrastructure Improvements (originally 5.4 and 5.5)	Developed by TWG; Ready for CAT Review
T-9	Transportation System Management (originally 5.1)	In progress
T-10	Incentives to Promote Low-GHG Vehicle Technologies (originally 1.5)	In progress
T-11	Low Carbon Fuel Standard (originally 3.1)	Developed by TWG; Ready for CAT Review
T-12	Zero Emission Vehicle Standards	Developed by TWG; Ready for CAT Review

Forestry

Priority Mitigation Options and Straw Proposal Development Status

#	Mitigation Option Name	Straw Proposal Development Status
F-1	Improved Forest Health (originally 2.6)	In progress
F-2	Reduced Conversion to Nonforest Cover (originally 2.1)	In progress
F-3	Enhanced Carbon Sequestration in Forests (originally 2.4)	In progress
F-4	Expanded Use of Wood Products for Building Materials (originally 3.3)	In progress
F-5	Expanded Use of Biomass Feedstocks for Electricity, Heat and Steam Production (originally 1.1)	In progress
F-6	Improved Commercialization of Advanced Lignocellulosic Processes (hydrolysis, gasification, pyrolysis or other) (originally 1.4, with 1.2 as a subset)	In progress
F-7	Enhanced Carbon Sequestration in Harvested Wood Products (originally 2.5)	In progress

Agriculture

Priority Mitigation Options and Straw Proposal Development Status

#	Mitigation Option Name	Straw Proposal Development Status
AW-1	Manure Digesters/Other Waste Energy Utilization (originally 1.4)	Developed by TWG; Ready for CAT Review
AW-2	In-State Production of Biofuels and Biofuels feedstocks (originally 1.2 and 1.3)	In progress
AW-3	Significantly Expand Source Reduction, Reuse, Recycling and Composting (originally 6.1, including 6.4 and 6.5)	Developed by TWG; Ready for CAT Review
AW-4	Agricultural Carbon Management (combines original options 2.3, 3.1, 3.3, 3.4, 4.1, 5.2)	Developed by TWG; Ready for CAT Review
AW-5	Agricultural Nutrient Management (combines original 3.2, 3.3, and 5.2)	Not yet developed by TWG
AW-6	Reductions In On-Farm Energy Use and Improvements in Energy Efficiency (originally 5.1)	Not yet developed by TWG
AW-7	Preserve Open Space/Agricultural Land (originally 4.2)	In progress

Energy Supply

Priority Mitigation Options and Straw Proposal Development Status

#	Mitigation Option Name	Straw Proposal Development Status
ES-1	Grid-based renewable energy incentives and/or barrier removal (originally 2.2)	Developed by TWG, ready for CAT review
ES-2	Distributed renewable energy incentives and/or barrier removal (originally 2.3)	Developed by TWG, ready for CAT review
ES-3	Efficiency improvements at existing renewable and power plants (originally 2.9 and 3.3)	Developed by TWG, ready for CAT review
ES-4	Technology Research & Development, plus Technology-Focused Initiatives (originally 1.6, 2.8, and 3.4)	Developed by TWG, ready for CAT review
ES-5	CCSR (including pre and post-combustion) incentives, requirements and/or enabling policies plus R&D (originally 5.1, 5.2, and 3.1a and b)	Developed by TWG, ready for CAT review
ES-6	Transmission system capacity, access, efficiency, and Smart Grid (originally 6.1, 6.2, and 6.5)	Being developed by TWG, not ready for CAT review
ES-7	Combined Heat and Power (CHP) and Thermal Energy Recovery and Use (originally 2.5)	Being developed by TWG, not ready for CAT review
ES-8	Incorporated into ES-5 (originally 3.1a)	

Next Steps for the TWGs

- Upcoming TWG meetings will cover:
 - Development of straw proposals for remaining options, and further elaboration of CAT-affirmed straw proposals
 - Review of proposed quantification procedures for initial options, including proposed data sources, methods, assumptions
 - Review of first round of quantification results and identification of needed revisions, if any
 - Identification of possible early consensus options for recommendation for CAT approval

Potential Additional CAT Meetings and Public Outreach

- Amendments to the schedule are being suggested to maximize opportunities for CAT deliberations and establish opportunities for public outreach on substantive CAT recommendations

Proposed Amended Schedule

[Proposed] September conference call

- Discuss straw proposals not yet ready at today's meeting

October 4 - meeting scheduled at WSU

- Review the analysis of options affirmed at the August meeting
- Discuss market mechanisms, cross-cutting issues and other areas for CAT recommendations not coming from TWGs

[Proposed] November CAT meeting

- Review the analysis of options not yet ready at today's meeting
- Discuss market mechanisms, cross-cutting issues and other areas for CAT recommendations not coming from TWGs

December 4 - meeting scheduled on west side

- Approve draft recommendations for public comment

[Proposed] Public outreach in December, with individual CAT member participation

- Public review and comment of draft recommendations

[Proposed] January CAT meeting

- Approve the final recommendations

Next CAT Meeting(s)

[Proposed] September conference call

- Review and affirm TWG suggested straw proposals for policy design for remaining options

October 4, 2007 in Tri-Cities, WA

- Review analysis results for individual initial options
- Discuss quantification principles and guidelines, and key assumptions for TWG analysis of policy options
- Identify early consensus options policy recommendations and any additions to the list of priorities for analysis policy options if/as needed
- Identify specific barriers to consensus and potential alternatives for remaining options, with guidance for additional work on options to TWG's
- Discuss market mechanisms and proposals to improve business climate for clean energy investments
- Updates on working groups
- Review final report progress and plans

Public Comment

**For more information
and to submit written comments**

[www.ecy.wa.gov/climate change](http://www.ecy.wa.gov/climatechange)